

What is claimed is:

1. An active ray curable ink jet solventless ink comprising: a bifunctional or higher acrylate compound having a structure expressed by general formula (1) in an amount of less than 35% by mass, and a monofunctional acrylate compound in an amount of 65% by mass or more:

wherein the general formula (1) is

$-(-R-O-)_n-$

where, R represents an alkyl group, and n represents an integer of 1 or larger.

2. An active ray curable ink jet solventless ink comprising: a bifunctional or higher acrylate compound having a structure expressed by general formula (1) in an amount of less than 80% by mass, and a trifunctional or higher acrylate compound in an amount of less than 10% by mass:

wherein the general formula (1) is

$-(-R-O-)_n-$

where, R represents an alkyl group, and n represents an integer of 1 or larger.

3. The active ray curable ink jet solventless ink of claim 1, wherein the ink comprises: a bifunctional or higher acrylate compound having a structure expressed by the general formula (1) in an amount of less than 35% by mass, a monofunctional acrylate compound in an amount of

65% by mass or more, and a trifunctional or higher acrylate compound in an amount of less than 10% by mass.

4. The active ray curable ink jet solventless ink of claim 1, further comprising at least one species of tertiary amine compound.

5. The active ray curable ink jet solventless ink of claim 1, further comprising at least one species of photo-polymerizable tertiary amine monomer.

6. The active ray curable ink jet solventless ink of claim 1, wherein the ink has an ink viscosity of 35 to 70 mPa·s at 30°C.

7. An image forming method for forming an image on a recording material, comprising:

 ejecting ink droplets of the active ray curable ink jet solventless ink of claim 1 through an ink jet recording head, and

 irradiating the ink with an active ray within 0.001 to 2.0 seconds after the ink droplets reach the recording material.

8. An image forming method for forming an image on a recording material, comprising:

ejecting ink droplets of the active ray curable ink jet solventless ink of claim 1 through an ink jet recording head, and

irradiating the ink with an active ray after the ink droplets reach the recording material;

wherein the total thickness of ink film obtained after the ink droplets are cured by irradiating the ink droplets with the active ray, measures 2 to 20 μm .

9. An image forming method for forming an image on a recording material, comprising:

ejecting ink droplets of the active ray curable ink jet solventless ink of claim 1 through an ink jet recording head,

wherein each ink droplet ejected from the nozzles of the ink jet recording head, amounts 1 to 15 pl.

10. The image forming method of claim 7, wherein the recording material is non-absorptive.

11. An ink jet recording apparatus used for the image forming method of claim 7, wherein total power consumption of a light source for irradiating the ink with the active ray, amounts less than 1 kw·hr.

12. An ink jet recording apparatus used for the image

forming method of claim 8, wherein total power consumption of a light source for irradiating the ink with the active ray, amounts less than 1 kw·hr.

13. An ink jet recording apparatus used for the image forming method of claim 9, wherein total power consumption of a light source for irradiating the ink with the active ray, amounts less than 1 kw·hr.